respectfully traverse this rejection.

Mossbrook fails to teach or suggest a "cured ink selected from . . . radiation-cured inks and thermoset inks" as recited by claim 1. Further, Mossbrook fails to teach or suggest "a cured varnish selected from . . . radiation-cured varnishes and thermoset varnishes" as recited by independent claim 27. And Mossbrook fails to teach or suggest "a varnish selected from . . . radiation-curable varnishes and thermoset varnishes" as recited by independent claims 54 and 55.

The previous Office Action took the position that "Mossbrook teaches . . . a radiation cured layer" and that the "e-beam cured coatings of Mossbrook" are "both inks . . . or varnishes." (Office Action mailed Oct. 15, 2002 at page 3, lines 6-7 and 13-14.)

However, Mossbrook has nothing to do with radiation *curing* of an ink or a varnish. The present Application describes radiation "curing" of inks and varnishes, as that term is understood to those of skill in the art. Radiation-curable varnish systems have:

> the ability to change from a fluid phase to a highly cross-linked or polymerized solid phase by means of a chemical reaction initiated by a radiation energy source, such as ultra-violet ("UV") light or electron beam ("EB") radiation. Thus, the reactants of the radiation-curable overprint varnish system are "cured" by forming new chemical bonds under the influence of radiation. Radiation-curable inks and varnish systems are described in The Printing Ink Manual, Chapter 11, pp.636-77 (5th ed., Kluwer Academic Publishers, 1993).

(Application at page 21, lines 2-10.) The reactants of a radiation-curable varnish include: i) monomers (e.g., low-viscosity monomers or reactive "diluents") and ii) oligomers/prepolymers (e.g., acrylates). (*Id.* at lines 20-21.) A radiation-curable *ink* incorporates one or more colorants with the monomer and oligomer/prepolymer reactants, such as those described for the radiation-curable varnish. (*Id.* at page 19, lines 19-22.)

Mossbrook fails to teach anything about radiation polymerization of monomer and oligomers/prepolymer reactants to change from a fluid phase to form a solid phase. This is because rather that disclosing radiation-cured inks and varnishes, Mossbrook teaches irradiation of a film to "alter the surface of the film and/or induce crosslinking between molecules of the polymers contained therein." (Col. 9, lines 9-11.) This irradiation procedure is a well-know method to enhance the surface energy of the film -- for example, to improve the adhesion of the ink to the film surface -- or to improve the strength of the film and help to avoid burn through during heat seal operations. (*See* the present Application, page 17, lines 6-12 and 18-22.) Such an irradiation procedure has nothing to do with radiation *cured* inks and varnishes.

To anticipate a claim, an applied reference must teach each and every element of the claim. MPEP §2131. Mossbrook fails to teach or suggest *curing* an ink or varnish to form a radiation-*cured* ink or a radiation-*cured* varnish; and accordingly, Mossbrook fails to anticipate independent claims 1, 27, and 54-55.

The rejected dependent claims contain recitations in addition to those of the independent claims from which they depend, and are therefore further patentable over Mossbrook.

WID II. Rejection Based on Mossbrook and Kawahata.

Claims 1-7, 11-19, 25-32, 34, 36-45 and 52-55 were rejected under 35 U.S.C. §103(a) as obvious in view of Mossbrook combined with U.S. Patent 5,019,202 to Kawahata.

Kawahata teaches a method of forming a printed pattern on a base paper to form a decorative sheet. The surface of the print is coated with a top coat that upon solidification creates "sharp concavities" at the print surface. (Abstract; column 3, lines 48-50; column 4, lines 46-48.) Mossbrook is discussed above.

A. Mossbrook and Kawahata Fail to Establish *Prima Facie* Obviousness.

Applicants respectfully submit that a *prima facie* case of obviousness has not been established necessary to shift the burden of rebuttal to Applicants, since neither Mossbrook nor

Kawahata offer any suggestion or motivation to incorporate the ink or coating system of Kawahata with the Mossbrook antifog film. *See* MPEP 2143.01.

The printed substrates of Kawahata and Mossbrook are as different as paper and plastic. Kawahata teaches "decorative [paper-based] sheets to be used for various construction materials, furnitures, etc." (Col. 1, lines 6-8 and 24-28.) Mossbrook teaches antifog thermoplastic films used for packaging products such as "meat products, cheese, and produce." (Col. 5, lines 14-18; col. col. 9, lines 22-29.) There is no motivation or suggestion to substitute the Kawahata ink or coating used with paper-based substrate in the decorative sheet field for the Mossbrook ink used with the Mossbrook antifog film in the food packaging field.

To the extent that the Examiner is relying upon common knowledge or well-known prior art to establish the position that "heat curing is less expensive than radiation curing" as recited on page 4 of the previous Office Action, Applicants respectfully request that the Examiner supply references to support that position. *See* MPEP 2144.03.

Also, as explained in the previous section -- and contrary to the position of the previous Office Action -- Mossbrook does *not* disclose radiation *curing* of a varnish or ink. Therefore, there is no "radiation curing" of an ink or varnish in Mossbrook for which the "heat curing" of a thermoset ink or varnish of Kawahata could be substituted.

The rejected dependent claims contain recitations in addition to those of the independent claims from which they depend, and are therefore further patentable over the proposed combination of Mossbrook and Kawahata.

B. Objective Evidence Establishes Non-Obviousness.

Although a *prima facie* case of obviousness has not been established with respect to the rejected claims, Applicants also respectfully traverse the obviousness rejection based on the combination of Mossbrook and Kawahata by directing the Examiner's attention to the comparative data in the Application (page 33, line 27 to page 36, line 15) as objective evidence establishing non-obviousness.

As described in the Example section of the Application, eight samples of printed

anti-fog films (Sample Nos. 1-8) were formed by applying a solvent-based ink formulation to one side of equivalent plastic films that incorporated 3% antifog agent in the outer layers. (Page 35, lines 7-16.) The "comparison" films of Samples Nos. 1-2 did not include either a radiation-cured varnish or a two-part reactive thermoset varnish on the print of the anti-fog film. Samples Nos. 3-6 were made according to the present invention because a cured overprint varnish (i.e., electron-beam curable overprint varnish) was on the print of the antifog film. (Page 35, lines 17-21.) Samples Nos. 7-8 were made according to the present invention because a cured overprint varnish (i.e., a two-part reactive thermoset varnish) was on the print of the antifog film. (Page 35, line 21 to page 36, line 2.)

Each of Samples 1-8 were subjected to conditions simulating storage of the printed films in roll form, which is the believed cause of "ghosting" (explained in the Application, page 2, lines 4-19). The comparative Samples 1-2 demonstrated deteriorated antifog characteristics, as shown by the Antifog Ratings of 1; whereas, the Samples 3-8 according to the present invention did not demonstrate any significant deterioration of antifog characteristics, as shown by the Antifog Ratings of 4.5 to 5 ("excellent").

There was no reason to have expected that the use of a radiation-cured overprint varnish or a thermoset varnish with a printed anti-fog film would cause the Samples 3-8 films to have superior anti-fog performance after exposure to ghosting-inducing conditions, as shown by the comparative data.

III. Rejection Based on Dionne and Lu.

Claims 1-10, 12-13, 16-35, 37-38, and 40-55 were rejected under 35 U.S.C. §103(a) as obvious over Dionne, "Can the Energy-Curing Industry . . ." Converting Magazine's Flex-Pack Management, Vol. 4, No. 1, pp. 2-3 (January 1, 1998) ("Dionne") combined with U.S. Patent 5,451,460 to Lu.

The prior art fails to suggest the desirability of combining Lu with Dionne. Accordingly, Applicants respectfully submit that a *prima facie* case of obviousness has not been established necessary to shift the burden of rebuttal to Applicants. The mere fact that Lu *could*

be combined with Dionne does not render the resultant combination obvious; the prior art must provide the teaching or suggestion supporting the combination. MPEP 2143.01.

The previous Office Action sets forth two proposed motivations to combine the antifog coatings of Lu with the Dionne film. The first proposed motivation is "to minimize migration concerns." (Office Action mailed Oct. 15, 2002 at page 5, line 15.) However, nothing in Lu teaches that an antifog coating reduces migration.

The second proposed motivation to combine the Lu antifog coating with the Dionne film is to "improve the heat sealability" of the Dionne film. (Office Action mailed Oct. 15, 2002 at page 5, line 16.) However, Dionne fails to suggest anything regarding a heat sealable film.

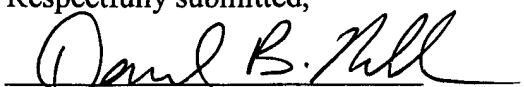
Since neither Lu nor Dionne offer any suggestion or motivation to make the proposed combination, a *prima facie* case of obviousness has not been established.

Further, even if a *prima facie* obviousness case were established, Applicants also respectfully traverse the obviousness rejection based on the combination of Dionne and Lu by directing the Examiner's attention to the comparative data in the Application (page 33, line 27 to page 36, line 15) as objective evidence establishing non-obviousness. Please refer to the previous section for a detailed discussion of this evidence, which applies with equal force here.

IV. Conclusion

In view of these remarks and the formal drawings, it is respectfully submitted that the present application is in condition for allowance. A notice to that effect is earnestly and respectfully requested.

Respectfully submitted,



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